

# The 2020 Velocity Software update – and “Metal to Cloud in 2 days”

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“If you can’t Measure it,  
I am Just Not Interested <sup>TM</sup>”

- **2020 at Velocity Software**
- **zVPS Version 5 supports Z**
- **Z15 Compression fun and games**
- **Metal to cloud in 2 days, yes, really**
- **How we did it...**

# 2020 At Velocity Software

- **zVPS Version 5 released in January**
- **Went to SHARE, CMG/Germany**
- **Lockdown???**
- **Datacenter Move**
  - Z15 T02 ESP, New DS8910F disk subsystem
  - Metal to cloud in 2 days after code 20
- **Moved websites during interesting times**
  - VelocitySoftware.com, VMWORKSHOP.ORG, others
- **Moved VSI Development seamlessly**
- **Moved Linux servers**
- **Turned off the BC12**

# zVPS Version 5 is Available!

## zVPS Version 5 is a MAJOR release

- z/VM support of latest and greatest (96 cpu support.....)
- **Linux subsystem support enhanced**
  - Docker, MongoDB, GPFS
- **zOSMON: new feature of zVPS**
  - **Very efficient SMF processing** for z/OS Performance MGMT
  - (SMF 70 / System, 30 / Jobs, 110 / CICS), more to come
- **VSEMON no Charge Feature of zVPS (Rich, Fri 14:00)**
  - z/VSE Support (system, batch, partitions)
  - BSI Stack, CICS
  - CSI Stack soon
- **IBM Secure Service Container Support**

# zVPS now does “one pane of glass”

- **Management wants**
  - “single pane of glass” - One tool that does all (and well)
- **Complete performance management includes:**
  - **z/VM System** Level: CEC, LPAR data, ALL Subsystems
  - **Linux** – Storage, CPU, file system, network
  - **Linux Process level** – applications, performance data
  - **TCPIP Network monitor**
  - z/VSE: partitions, CPU, I/O, CICS, TCPIP (BSI)
  - z/OS: CICS(110), BATCH (30), SYSTEM (70) (extra \$\$)
- **Application subsystem analysis**
  - Java, WAS, Oracle, MongoDB, Docker
- **Outside “Z” server platform analysis**
  - **Linux on “x”, VMWare, KVM**, Secure Service Container
  - Microsoft servers
  - VPN, gateways, utilities

# Z15 Compression Fun and Games

## Experiments with on z15 board compression

- Easy to use in both CMS and z/OS
- Compression for SMF records about 90%

## Compression / Decompression Pipe stage created

## zVPS will likely start compressing history data

- 75% compression on very dense data....
- 50% better than “CMS PACK”

## Could do it for VSE when z15 is used

# Z15 Compression Fun and Games

## ZOSMON agent sends data to zVPS (VM2,VM4,NTK)

- Uses .3% of one GP (A02...)

```

Screen: ZOSJCPU Velocity Software ESAMON 5.112 06/12
2 of 4 z/OS Job/Step CPU/Resource Analysis SYSID VSI1 SRVCLS *
<-----Job-----> <-----Service Units-
Time      SYSID Name      ID      Step      Total  CPU  SRB  I/O
-----
15:37:00 VSI1  ZOSMNV2  STC08971 ZMON      146.6 146.3  0.3   0
          ZOSMNV4  STC07095 ZMON      145.7 145.3  0.4   0
          ZOSMONTK JOB09346      137.6 137.3  0.4   0 ←----- Compressed
15:36:00 VSI1  ZOSMNV2  STC08971 ZMON      147.4 147.2  0.3   0
          ZOSMNV4  STC07095 ZMON      146.4 146.0  0.4   0
          ZOSMONTK JOB09346      127.1 126.7  0.4   0
15:35:00 VSI1  ZOSMNV2  STC08971 ZMON      142.7 142.4  0.3   0
          ZOSMNV4  STC07095 ZMON      144.4 144.1  0.3   0
          ZOSMONTK JOB09346      127.8 127.4  0.3   0
    
```

```

Screen: ZOSJCPU Velocity Software ESAMON 5.112 06/12 14:16-16:17
1 of 4 z/OS Job/Step CPU/Resource Analysis SYSID VSI1 SRVCLS * JOB ZOS*
<-----CPU Percents----->
Time      SYSID Name      ID      Step      Total Stnrd SRB  TCB SRB I/O Ctl USS
-----
15:37:00 VSI1  ZOSMNV2  STC08971 ZMON      0.3  0.3  0  0  0  0  0  0
          ZOSMNV4  STC07095 ZMON      0.3  0.3  0  0  0  0  0  0
          ZOSMONTK JOB09346      0.3  0.3  0  0  0  0  0  0
    
```

# zVPS Enterprise View – All LPARs in Enterprise

## Tailorable, expandable, zoomable

Today is Monday 2 Dec 2013 zVIEW Version 4159

**VELOCITY SOFTWARE** **zVIEW**  
Enterprise View - Velocity Software - VSIVM4 (DEMO)

First level

VSVM1	Expand	VSVM2	Expand	VSVM3(old)	Expand
VM1 13/12/02 18:29 CP Total (2) 6.63%		VM2 13/12/02 18:29 IFL Total (1) 0.91%		VM3 13/12/02 21:29 024B42-0 99.22%	
Linux Nodes (Distributed Servers)		Linux Nodes (z/VM-Guests)		Linux Nodes (z/VM-Guests)	
LINUX9 (9) 3.93%		RH5X161 0.43%		LES11T 2.29%	
suselnx3 (9) 2.57%		RH5Z161 0.37%		Linux Nodes (Distributed Servers)	
REDHAT (2) 2.30%				PENSUSE 7.68%	

Demo System V4				
Demo	13/12/02	18:29	IFL Total (1)	17.77%
Linux Nodes (z/VM-Guests)				
roblx1	2.83%			
redhat6	1.18%			
oracle	0.82%			
redhat56	0.47%			
redhat5x	0.43%			
lxsugar (2)	0.41%			
redhat64	0.31%			
sles8 (2)	0.31%			
sles10	0.29%			
redhat5	0.27%			
redhat3	0.25%			
redhat6x	0.24%			
suselnx2	0.22%			
sles11 (2)	0.22%			
sles11x	0.20%			
sles11x3	0.19%			
sles9x	0.18%			
scsil0s	0.17%			
sles10x4	0.17%			
sles9	0.16%			
Linux Nodes (Distributed Servers)				
linux93 (2)	100.00%			
opensuse (2)	8.97%			
JIRA (2)	5.88%			
vpnbrz	5.50%			
vpnbrc	4.76%			
mail (9)	3.42%			
vpnz	2.35%			

Second level

Tims Test System				
Tim1.2	13/11/27	13:09	IFL Total (1)	0.10%
Linux Nodes (z/VM-Guests)				
redhat56	1.85%			
	1.50%			
	0.85%			
redhat56	0.57%			



# zVIEW Linux performance in one click

Nednesday 7 Nov 2018 00:46

zVIEW Version 4310



zVIEW - Velocity Software - VSIVM4 (DEMO)  
Performance Displays for zVM and Linux on System z

The screenshot displays the zVIEW interface with several panels:

- mylinux**: A list of processes on node ZSXL0006, including systemd, kthreadd, kworker, cron, and rcu.
- ESALNXP - VSI Linux Percent Usage by Process - DEMO**: A table showing CPU usage by process. Key entries include:

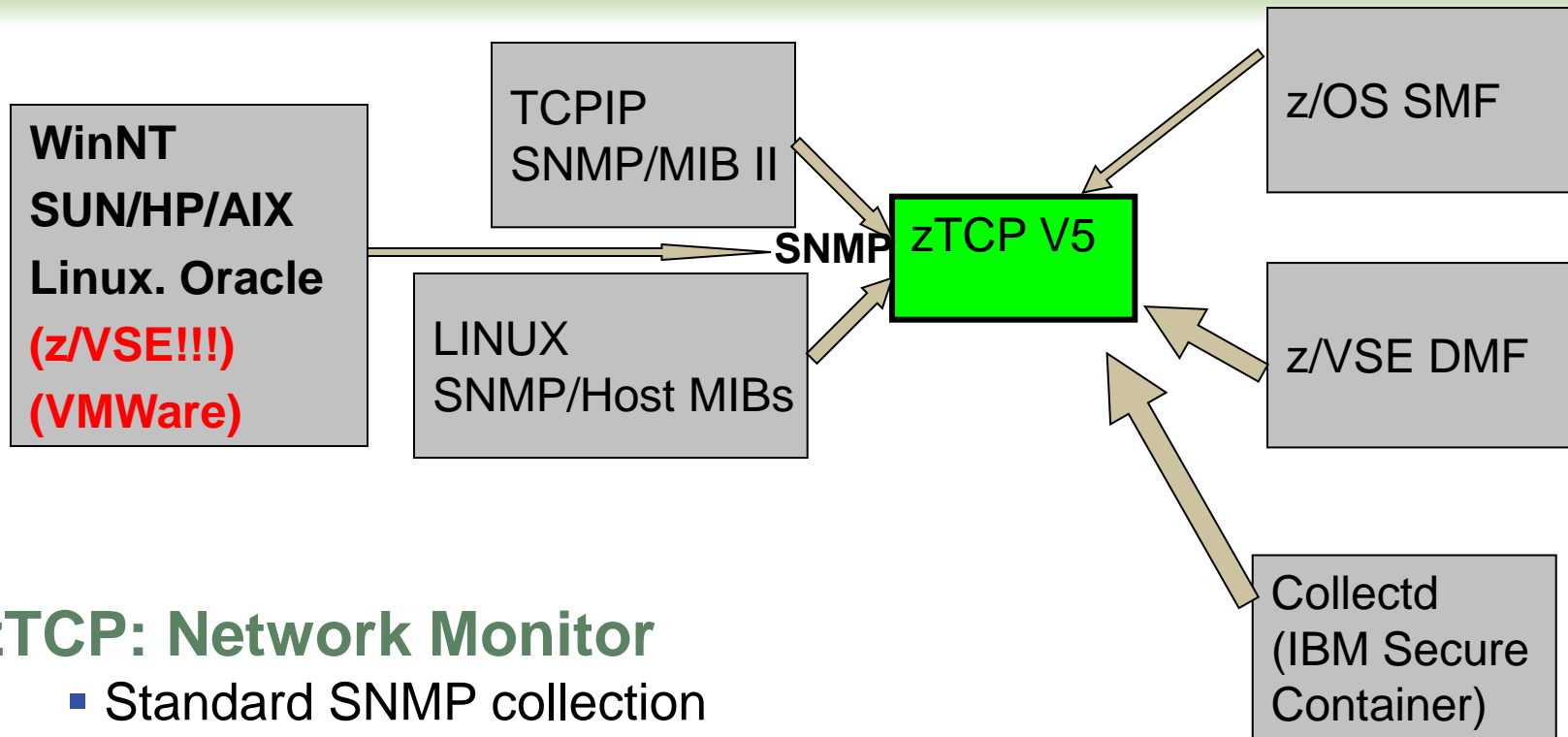
Time	Node	Name	ID	PPID	GRP	Tot	sys	user	syst	usr	valu	valu	Size	RSS	Peak	Swap	Data	Stk	EXEC
00:46:00	lxdb2001	*Totals*	0	0	0	0.6	0.1	0.1	0.1	0.3	0	0	4549	322	4557	0	1391	4.8	3.8
00:46:00	lxdb2001	init	1	1	1	0.0	0.0	0	0	0	0	20	2.4	0.9	2.4	0	0.2	0.1	0.0
- ESAHST2 - LINUX HOST Storage Analysis Report - DEMO**: A table showing storage utilization for ZPRO and VPNS nodes.

Time	Node/Group	Index	Size	Used	Full	Err	Alloc	Units	R/W	Boot	Storage	Description
00:46:00	ZPRO	0	196K	109K	55.7	0	1K				Totals	
00:46:00	VPNS	0	5376	5376	100	0	1K				Totals	
- ESAUCD2 - LINUX UCD Memory Analysis Report - DEMO**: A table showing memory usage for ZPRO and VPNS nodes.

Time	Node/Group	Total	Avail	Used	Total	Avail	Used	MIN	Avail	CMM	Buffer	Cache
00:46:00	ZPRO	4600	3	1433	3166	0	107E	107E	107E	0	0	107E
00:46:00	VPNS	10.1	4.2	5.9	0	389	0	0	0	180.5	733.9	0.33
- ESAUCD4 - LINUX UCD System Statistics Report - DEMO**: A table showing system statistics for ZPRO and VPNS nodes.

Time	Node/Group	Total	Syst	User	Nice	Pct	In	Out	In	Out	Rate	Intrpt	<Load	A
00:46:00	ZPRO	2.7	1.2	1.4	0	1188	0	0	0	56.7	2080.5	1023.7	0.49	0
00:46:00	VPNS	10.1	4.2	5.9	0	389	0	0	0	180.5	733.9	0.33	0	0
- ESAHST4 - LINUX HOST System Statistics Report - DEMO**: A table showing host system statistics.
- IFL Utilization**: A line graph showing IFL utilization over time for VSIVM5, VSIVM2, VSIVM1, VSIVM4, and Overhead IFL.

# “snmp” Collector zTCP Enhanced

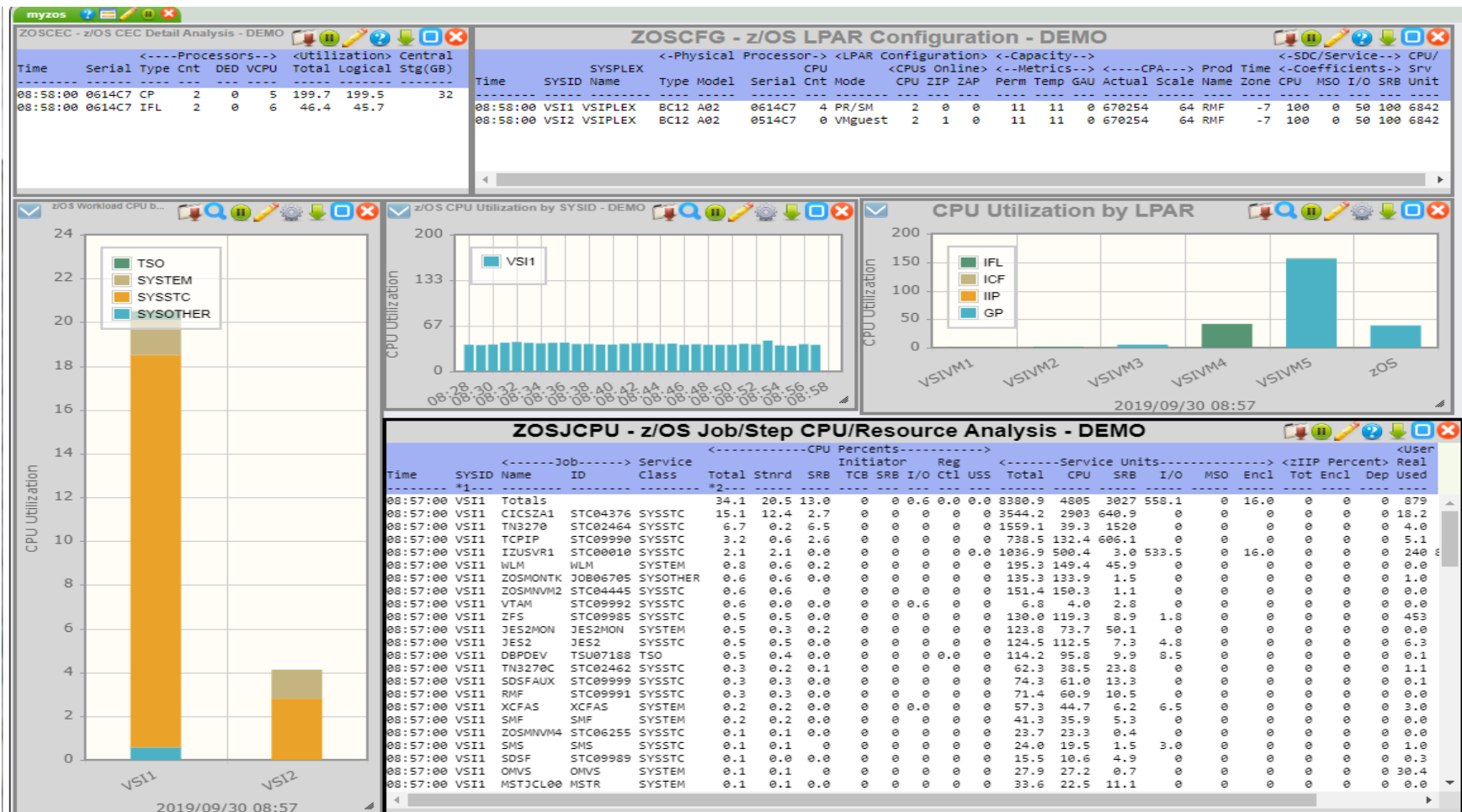


## zTCP: Network Monitor

- Standard SNMP collection
- Data added to PDB
- Now accepts SMF Records
- Now accepts DMF records
- Now accepts Collectd

# zOSMON fully integrated – one click

Instant z/OS system, CPU, jobs, configuration. (Tailorable)



# The Challenge: Metal to cloud in 2 days

## Velocity Software participated in the Z15 T02 ESP program

- Expanded product portfolio requires the latest hardware
- Moved datacenter
- Opportunity to show reality

## Z15 T02 Installation

- Hardware installed in new cage in colo facility
- DS8910F disk subsystem installed brand new

## z/VM Cloud Enablement

- Add – on product to zVPS
- Provided on-prem cloud environment
- **zPRO is simple to install and manage**
- Easy to use “user/directory” management

## zPRO Objectives

- Modernize the z/VM Platform, compete with public cloud
- Simplify z/VM
- Provide Systems programmers with simple to use management
- Provide end users simple access

# The Challenge: Metal to cloud in 2 days - YES

Cloud installed in 2 “normal” days after code 20.

- Prior planning required
- Disks formatted
- z/VM Installed, 4-way SSI
- RACF Installed (very time intensive, get help!)
- zVPS Installed
- zPRO and zDIRECT installed
- Linux golden image installed
- 155 images cloned in 20 minutes

Cloud on Z is NOT rocket science

See James zPRO V4 presentation Friday 10:00 EST

# Cloud on Z – KEEP IT SIMPLE!

z/VM is simple and elegant.

- CMS is very powerful programming and server environment

zVWS – The Velocity Software Web Server is native CMS

- Generalized webserver written by Velocity Software in early www days
- Written in assembler to be FAST
- Simple CMS based architecture
- **Installs in minutes**

zPRO is Simple, **installs in minutes**

- Native CMS application has no need for complex SMAPI
- No LINUX server requirement for http server
- No JAVA, no workstation pre-reqs, no complexity, no browser issues
- No DIRMAINT (zDIRECT is very simple, **installs in minutes**)

# zPRO is NON-INTRUSIVE

zPRO operates with your existing infrastructure

- RACF, DIRMAINT
- VMSecure
- LDAP
- No directory manager
- No additional servers (SMAPI, DATAMOVE.....)

zDIRECT (no charge feature, NON-INTRUSIVE)

- Updates USER DIRECT
- Adds “comments” defining controls
- One small change so MAINT defaults read/only to directory disk

No Linux server requirements

Try it, you like it. Or remove it with no pain



# And NOW...

Turn it over to Rick Barlow to talk about the z15 T02 implementation....